



## Mimicking Bilateral Vulvar Testicles after Labia Majora Augmentation with Hyaluronic Acid

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### Abstract

Labial rejuvenation can be volumized with Hyaluronic Acid (HA) and has been reported to improve the aesthetic aspect of the external genitalia. Adverse effects of HA injection reported are local reactions, including bruise, erythema, swelling, granuloma and infection in facial aspect. Like facial injection of HA, complication may occur in genital procedure. We report an interesting case complicated with lump formation, mimicking bilateral testicle of vulva after labia majora augmentation with HA. This complication can be resolved by extraction of HA from the local lesion. The patient recovered well uneventfully.

**Keywords:** Cosmetic vaginal injection; Hyaluronic acid; Labia majora augmentation; Vulvar testicle

### Introduction

The appearance of external female genitalia is affected by childbirth, physical exertion and aging. Such as a decrease in Hyaluronic Acid (HA), collagen, and fat result in volume loss, wrinkles development, and an increase minora to majora ratio in size affect only just the sexual function and self-esteem but also psychosocial function [1-3]. Cosmetic gynecology refers to aesthetic procedures in correction and enhancement of the genital appearance, which has been steadily increasing with the prevalent media coverage [4,5]. It reflects the un-assuring condition that women think about their bodies and their male partners think about them.

Labial rejuvenation can be volumized with fat grafting and HA and have been reported to improve the aesthetic aspect of the external genitalia [1,6,7].

Fasola and Gazzola [6] described the labia majora augmentation with HA in 54 patients as a significant rejuvenation and no virtual complications. However, adverse effects of HA injection reported were local reactions, including bruise, erythema, swelling, granuloma and infection [8,9]. Severe events such as tissue necrosis, and embolization could occur when intravascular injection is administrated [10-12].

Herein, we report a rare complication of lump formation in bilateral vulva after labia majora augmentation with HA and the patient recovers uneventfully by direct extract HA from the affected sites.

### Case Presentation

In November 2018, a 43-year-old woman presented to our out-patient department with the complaint of bilateral vulvar bulging mass. Her height was 160 cm, weight was 58 kg and she had once vaginal delivery. About 8 months ago, she visited an aesthetic clinic for vaginal rejuvenation. The procedures she had at the institution were posterior vaginal wall repair and labia major augmentation with Hyaluronic Acid (HA). The information obtained from the patient about the injection for labia augmentation was 6 ml of HA (unknown type) for each side and 12 ml in total. She had mild swollen tenderness immediately after the procedure. Three months later, she found out by herself bilateral vulvar bulging mass and mild pain when compressed or during walking. She once called the aesthetic clinic. They suspected of HA accumulation and asked her waiting for self-remission due to the capability of HA bio-degeneration.

The patient then visited our gynecologic clinic. On vaginal examination, an ovale shape vulvar mass with size of 4 cm × 2 cm was noted in both sides of labia majora, mimicking vulvar testicles (Figure 1A). It was firm and localized bilaterally without redness and inflammation. The posterior wall repair was recovered uneventfully. HA accumulation was also diagnosed. We

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**Figure 1:** A) A lump formation in the labia majora after HA injection, mimicking a testicle which identified by hand squeezing. B) Direct extraction of HA from the lesion.

offered two therapeutic options for her, which were local injection of hyaluronidase and waiting for self-remission or local extraction of HA. Due to suffering a sensation of a mass for a long time, she decided and consented to a local extraction of HA. With local anesthesia, 18 G needle was used to puncture a small hole and manipulate to squeeze HA out from the lump of labia majora (Figure 1B). Uneventfully, she went home with 3 days of oral medication (NSAIDs and antibiotics) and recovered well without complications after one week.

## Discussion

Hyaluronic acid is widely used throughout the medical field, initially in joint fluid replacement to treat osteoarthritis or vitreous replacement in ophthalmologic surgery [13,14]. HA as injectable dermal filler for cosmetic purpose was first available in Europe in 1996 and approved by the US FDA in 2004 [15]. Among many cosmetic injectable fillers such as collagen, synthetic polymers, and calcium hydroxyapatite, HA is the most preferred and widely used due to its non-immunogenicity and longevity within tissue [16]. Like other body areas, female genitalia are affected by the normal process of aging. Therefore, the popularity for female genital aesthetic procedures has gained steadily over the past decade [4,5]. HA filler injections for vaginal laxity, labial atrophy and sexual dysfunction have been reported in some articles [6,17-19]. Aguilar et al. [19] described a patient with vaginal laxity resistant to physical therapy treated successfully by lipofilling and an injection of combined Platelet-Rich-Plasma (PRP) and HA into the vulvo-vaginal area. Three articles described labial majora augmentation with HA injection for treating labial atrophy [6,17]. Fasola and Gazzola [6] described a detailed injective technique for labial majora augmentation and a staging system for labial hypotrophy according to three grades (mild, moderate and severe) concerning both the adipose tissue and the cutaneous layer. Biguria et al. [18] describe the use of PRP and HA injection to clitoris and G spot as a promising therapy for the improvement of sexual function in women.

Although a variety of HA fillers are commercially available and they differ in HA concentration, particle size, molecular weight, cross linking density and hydration. They are approved for dermal implantation for treating facial wrinkles and folds; therefore, all other uses are considered off-label [20]. It cannot be overemphasized the product technical adaptation for the indication and legal and safety concerns. Only one product (Desirial Plus, Vivacy) has been clinically tested and received European approval for this female genital indication [21].

Hyaluronic acid can be degraded with time by a family of enzymes called hyaluronidases and there are at least seven types existed in humans [22]. Our patient has suffered from persistent lump formation, which mimicking bilateral vulvar testicles, without self-degeneration of HA for eight months. The possible reasons may be that unknown HA injected was large particles or high molecular weight, over-dosage used, chronic inflammation and local capsule formation avoiding enzymes infiltration for degradation so that HA cannot be resolved spontaneously with time. Complications of labial majora augmentation with HA are associated with poor injection technique and distribution of filler. Here, we share our clinical experiences and some techniques to void the possible complications. To void the nodules formation, we mix HA with PRP (1:1) to decrease viscosity and to facilitate infiltration of HA in labia majora. The injection volume of HA is 2 ml to 4 ml for each side of labia majora. If more than 4 ml are required to achieve a satisfactory volume, we will arrange a subsequent appointment at 3 to 6 months later. The layers of labia majora are infiltrated, the subcutaneous layer and the adipose corpus (layer between subcutaneous and Colles fascia) of labia majora, with 22- or 23-gauge blunt cannula. The infiltration of subcutaneous layer is for labial wrinkles reduction and the adipose corpus is for labial volumization. A fan-shaped fashion technique is used with homogenous distribution and mild massage during infiltration of HA. If excessive, too superficial, or non-homogenous distributions are notified, the use of hyaluronidases should be considered. We recommend the dosage of hyaluronidase about 10 International Units (IU) per infiltration [23,24].

In the literature, pulmonary complications such as embolism and diffuse alveolar hemorrhage of HA injection for cosmetic vaginal procedure have been reported in two articles [10,25]. Pulmonary complications related to HA injections are caused by intravascular injections and lead to HA into systemic circulation. Because an extensive venous plexus immediately surrounds the vagina, injection of HA into anterior vaginal wall can cause potential complications. In order to avoid intravascular injection, slow and gentle performance of HA, and aspiration to verify any inadvertent intravascular placement, are applied in our routine practice.

## Conclusion

In summary, Labia majora augmentation with HA injection may cause a lump formation and mimicking a vulvar testicle. This complication can be resolved by extraction of HA from the local lesion. HA injection as a cosmetic vaginal procedure should be performed with caution concerning about material preparation, and careful manipulation. Physician also must be aware of possibly severe complications such as pulmonary embolism. Thus, labia majora augmentation with HA is able to provide a safe and effective treatment for female genital rejuvenation.

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